

# User's Manual



## Falcon 4D Plus Series



## **FCC COMPLIANCE STATEMENT FOR AMERICAN USERS**

This equipment has been tested and found to comply with the limits for a CLASS A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at own expense.

## **EMS AND EMI COMPLIANCE STATEMENT FOR EUROPEAN USERS**

This equipment has been tested and passed with the requirements relating to electromagnetic compatibility based on the standards EN 55022:1998+A1:2000+A2:2003, CISPR 22 , Class A EN 55024:1998+A1:2001+A2:2003, IEC 61000- 4 Series EN 61000-3-2 / 2000 & EN 61000-3-3 / 1995. The equipment also tested and passed in accordance with the European Standard EN55022 for the both Radiated and Conducted emissions limits.

## **FALCON PLUS SERIES TO WHICH THIS DECLARATION RELATES IS IN CONFORMITY WITH THE FOLLOWING STANDARDS**

EN55022 : 1998, CISPR 22, Class A / EN55024 : 1998 IEC 61000-4 Serial / EN61000-3-2 : 2000 / EN 6100-3-3 : 1995 / CFR 47, Part 15/CISPR 22 3rd Edition : 1997, Class A / ANSI C63.4 : 2001 / CNS 13438 / IEC60950-1 : 2001 / GB4943 : 2001 / GB9254 : 1998 / GB17625.1 : 2003 / EN60950-1 : 2001

### **CAUTION**

Danger of explosion if battery is incorrectly replaced  
Replace only with the equivalent type recommended by the manufacture.  
Dispose of used batteries according to the manufacturer's instructions.

Specifications are subject to change without notice.

# Safety Instructions

Bitte die Sicherheitshinweise sorgfältig lesen und für später aufheben.

1. Die Geräte nicht der Feuchtigkeit aussetzen.
2. Bevor Sie die Geräte ans Stromnetz anschließen, vergewissern Sie sich, dass die Spannung des Geräts mit der Netzspannung übereinstimmt.
3. Nehmen Sie das Gerät bei Überspannungen (Gewitter) vom Netz. Das Gerät könnte sonst Schaden nehmen.
4. Sollte versehentlich Flüssigkeit in das Gerät gelangen, so ziehen sofort den Netzstecker. Anderenfalls besteht die Gefahr eines lebensgefährlichen elektrischen Schlags.
5. Wartungs- und Reparaturarbeiten dürfen aus Sicherheitsgründen nur von autorisierten Personen durchgeführt werden.
6. Bei Wartungs- und Reparaturarbeiten müssen die Sicherheitsvorschriften der zuständigen Berufsverbände und Behörden unbedingt eingehalten werden.
7. Bei Verletzungen unbedingt den Arzt aufsuchen und die gegebenenfalls die zuständigen Stellen benachrichtigen. Unterlassung kann zum Verlust der Versicherungsleistungen führen.

# Safety Instructions

Please read the following instructions seriously.

1. Keep the equipment away from humidity.
2. Before you connect the equipment to the power outlet, please check the voltage of the power source.
3. Disconnect the equipment from the voltage of the power source to prevent possible transient over voltage damage.
4. Don't pour any liquid to the equipment to avoid electrical shock.
5. ONLY qualified service personnel for safety reason should open equipment.
6. Don't repair or adjust energized equipment alone under any circumstances. Someone capable of providing first aid must always be present for your safety
7. Always obtain first aid or medical attention immediately after an injury. Never neglect an injury, no matter how slight it seems.

<b>1. BARCODE PRINTER.....</b>	<b>5</b>
1-1. Printer Accessories.....	5
1-2. General Specifications.....	5
1-3. Communication Interface.....	7
1-4. Printer Parts.....	9
<b>2. PRINTER INSTALLATION.....</b>	<b>11</b>
2-1. Ribbon Installation.....	11
2-2. Label Installation.....	13
2-3. Label Roll Core Installation Instruction.....	14
2-4. Card / Hang tags Installation.....	15
2-5. PC Connection.....	15
2-6. Driver Installation.....	16
<b>3. ACCESSORY.....</b>	<b>17</b>
3-1. Stripper Installation.....	17
3-2. Cutter Installation.....	20
3-3. CF Card Adapter Installation.....	22
3-4. CF Card Instruction.....	23
<b>4. CONTROL PANEL.....</b>	<b>24</b>
4-1. LED Status.....	24
4-2. FEED Key.....	25
4-3. Self-Test.....	25
4-4. Auto Sensing.....	26
4-5. Dump Mode.....	26
4-6. Direct Thermal / Thermal Transfer Mode Switch.....	26
4-7. See-through Sensor on/off.....	27
4-8. Error Messages.....	28
<b>5. MAINTENANCE AND ADJUSTMENT.....</b>	<b>29</b>
5-1. Thermal Print Head Cleaning.....	29
5-2. Thermal Print Head Balance Adjustment.....	29
5-3. Print Line Adjustment.....	30
5-4. Adjust the cutter.....	30
5-5. Troubleshooting.....	31

# 1. Barcode Printer

## 1-1. Printer Accessories

After unpacking, please check the accessories that come with the package, and store appropriately.

- ◆ Barcode printer
- ◆ Power cord
- ◆ Switching Power
- ◆ USB Cable
- ◆ Label
- ◆ Ribbon
- ◆ Empty Ribbon Roll
- ◆ Clean card
- ◆ Quick Start Guide
- ◆ CD (includes label editing software CLabel / Manual)

## 1-2. General Specifications

Model	Falcon 4D Plus (CFD-4206P)	Falcon 4D Plus (CFD-4304P)
Resolution	203 dpi (8 dot/mm)	300 dpi (12 dot/mm)
Print Mode	Thermal Transfer / Direct Thermal	
CPU	32 Bit	
Memory	4MB Flash, 8MB SDRAM	
Print Speed	2 IPS ~ 6 IPS	2 IPS ~ 4 IPS
Print Length	Min 12mm (0.47"), Max 1727mm (68")	Min 12mm (0.47"), Max 762mm (30")
Print Width	108 mm (4.25")	105.7mm (4.16")
Sensor Type	Adjustable Reflective sensor; Fixed transmissive, center aligned	
Sensor Detection	Type: Label gap and black mark sensing. Detection: Label length auto sensing and / or program command setting	
Media	Label Roll OD: Max. 125mm (4.92") Core Diameter: 1", 1.5", 3" Width: 25mm (1 ") ~ 118mm (4.64") Thickness: 0.06~0.25mm (0.0025"~0.0098")	
Ribbon	Length: 300M (981 ft) Max. ribbon roll OD: 68mm (2.67 ") Type: transfer ribbons (wax, hybrid, and resin) in widths of 30mm to 110mm (1.88" to 4.33") Core Inner Diameter: 25.4mm (1")	
Printer Language	EZPL (Firmware downloadable)	
Software	Application: CLabel-IV(EZPL only) DLL & Driver: Microsoft Windows NT 4.0, 2000 and XP	
Resident Fonts	11 resident Windows bit mapped fonts (6,8,10,12,14,18,24,30,16X26,OCR A & B); can be rotated in 8 orientations and expandable 8 times horizontally and vertically. Scalable Font in 4 orientations.	
Fonts Download	Windows bit mapped font: can be rotated in 8 orientations and expandable 8 times horizontally and vertically. Asian font: can be rotated in 4 orientations and expandable 8 times horizontally and vertically. True Type Font: can be rotated in 4 orientations.	
Image Handling	Support BMP and PCX. Support ICO, WMF, JPG, EMF file through software. Support image resize, rotating, mapping and inverse through software.	
Barcodes	Code 39, Code 93, Code 128 (subset A, B, C), UCC/EAN-128 K-Mart, UCC/EAN-128, UPC A / E (add on 2 & 5), I 2 of 5, I 2 of 5 with Shipping Bearer Bars, EAN 8 / 13 (add on 2 & 5), Codabar, Post NET, EAN 128, DUN 14, MaxiCode, HIBC, Plessey, Random Weight, Telepen, FIM, China Postal Code, RPS 128, PDF417, Datamatrix code & QR code	

<b>Interfaces</b>	Serial port: RS-232 ( Baud rate : 4800 ~ 115200 , Xon/Xoff , DSR/DTR ) USB port: V2.0 Parallel port: Bi-direction
<b>Control Panel</b>	Two Bi-color LED: Ready, Status Function Key: FEED
<b>Power</b>	Auto Switching 100/240VAC, 50/60 Hz
<b>Environment</b>	Operation: 41°F to 104°F (5°C to 40°C) Storage: -4°F to 122°F (-20°C to 50°C)
<b>Cert. Approval</b>	CE, FCC Class A, CCC, CB, cUL, BSMI
<b>Humidity</b>	Operation: 30-85%, non-condensing. Free air. Storage: 10-90%, non-condensing. Free air.
<b>Printer Dimension</b>	Length: 285 mm (11.2") Height: 171 mm (6.8") Width: 226 mm (8.9") Weight: 2.72 Kg
<b>Options</b>	Rotary Cutter Module Stripper Module CF Card Adapter with RTC Internal Ethernet Adapter Card

*Specifications are subject to change without notice.*

## 1-3. Communication Interface

### Parallel Interface

Handshake : DSTB connects to the printer, BUSY connects to the host

Interface cable : Parallel cable compatible to IBM PC

Pin out : See below

PIN NO.	FUNCTION	TRANSMITTER
1	/Strobe	host / printer
2-9	Data 0-7	host
10	/Acknowledge	printer
11	Busy	printer
12	/Paper empty	printer
13	/Select	printer
14	/Auto-Linefeed	host / printer
15	N/C	
16	Signal Gnd	
17	Chasis Gnd	
18	+5V,max 500mA	
19-30	Signal Gnd	host
31	/Initialize	host / printer
32	/Error	printer
33	Signal Ground	
34-35	N/C	
36	/Select-in	host / printer

### Serial Interface

Serial Default : 9600 baud rate, no parity, 8 data bits, 1 stop bit, XON/XOFF protocol and  
Setting : RTS/CTS ◦

RS232 HOUSING (9-pin to 9-pin)

DB9 SOCKET		DB9 PLUG
---	1	+5V,max 500mA
RXD	2	TXD
TXD	3	RXD
DTR	4	N/C
GND	5	GND
DSR	6	RTS
RTS	7	CTS
CTS	8	RTS
RI	9	N/C
PC		PRINTER

**【Note】** The total current output from parallel port and serial port altogether can not exceed 500mA.

### USB Interface

Connector Type : Type B

PIN NO.	1	2	3	4
FUNCTION	VBUS	D-	D+	GND

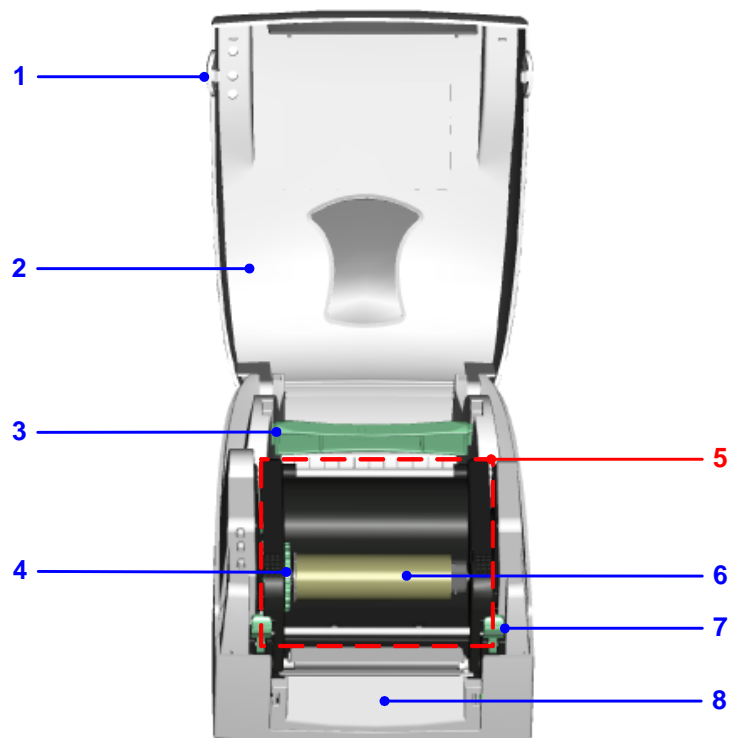


## Internal Interface

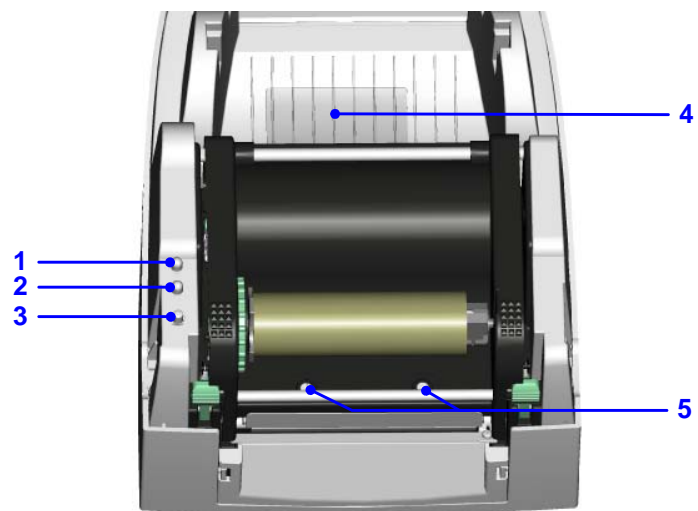
UART1 wafer			Ethernet module
N.C	1	1	N.C
TXD	2	2	RXD
RXD	3	3	TXD
CTS	4	4	RTS
GND	5	5	GND
RTS	6	6	CTS
E_MD	7	7	E_MD
RTS	8	8	CTS
E_RST	9	9	E_RST
+5V	10	10	+5V
GND	11	11	GND
+5V	12	12	+5V

UART2 wafer			Expansion module
+5V	1	1	+5V
CTS	2	2	RTS
TXD	3	3	RXD
RTS	4	4	CTS
RXD	5	5	TXD
GND	6	6	GND

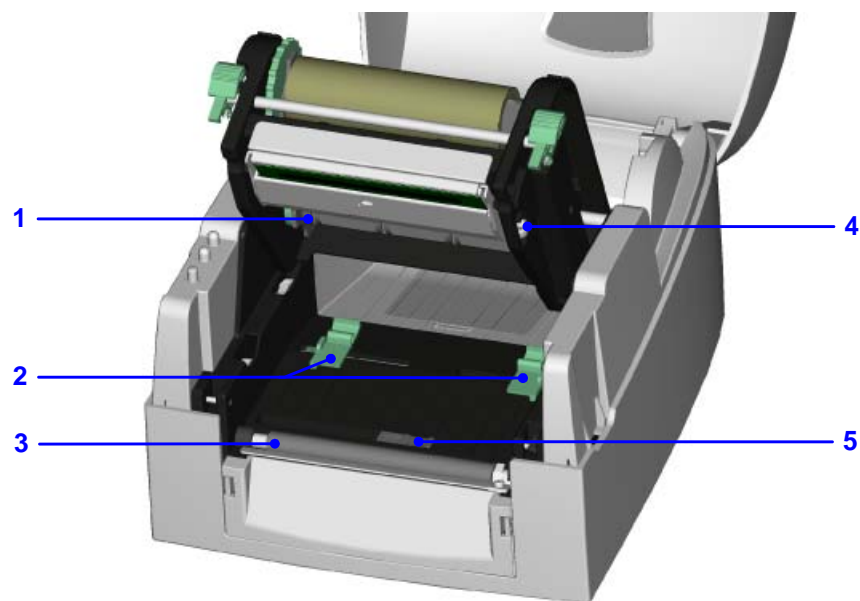
## 1-4. Printer Parts



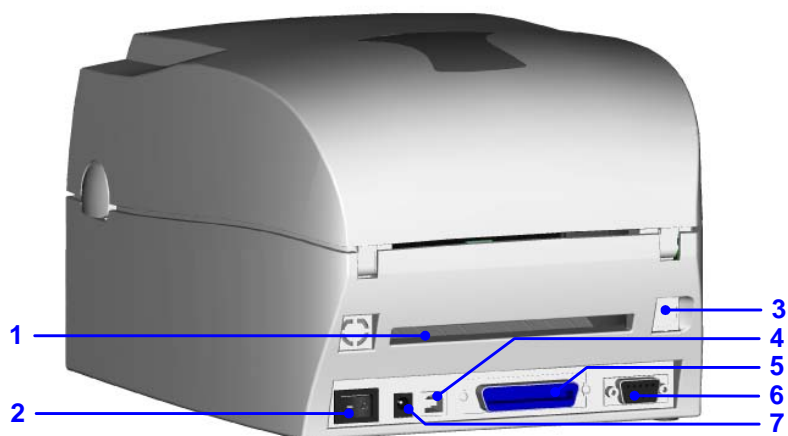
1.	Cover Open Button
2.	Top Cover
3.	Label Roll Core
4.	Ribbon Rewind Wheel
5.	Print Mechanism
6.	Ribbon Rewind Shaft + Empty Ribbon Roll
7.	Locking Tenon (left/right)
8.	Front Cover Piece



1.	LED Light (Ready)
2.	LED Light (Status)
3.	FEED Key
4.	CF Card Slot Cover
5.	Print Head Pressure Adjustment Screw (left/right)



1.	Ribbon Supply Shaft
2.	Label Guide
3.	Platen Roller
4.	Print Line Adjustment Gear
5.	Label Sensor



1.	Fan-Fold Label Insert
2.	Power Switch
3.	Ethernet Socket (Option)
4.	USB Port
5.	Parallel Port
6.	Serial Port (RS-232)
7.	Power Socket

\* The communication ports may vary depending on product types.

## 2. Printer Installation

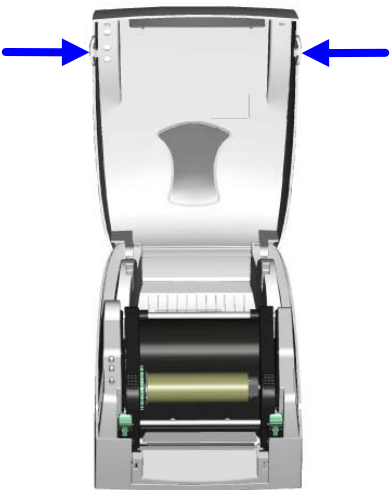
This printer model has the following print modes:

Thermal Transfer (TT)	When printing, ribbon must be installed to transfer the print contents onto the media.
Direct Thermal (DT)	When printing, no ribbon is necessary; it only requires direct thermal media.

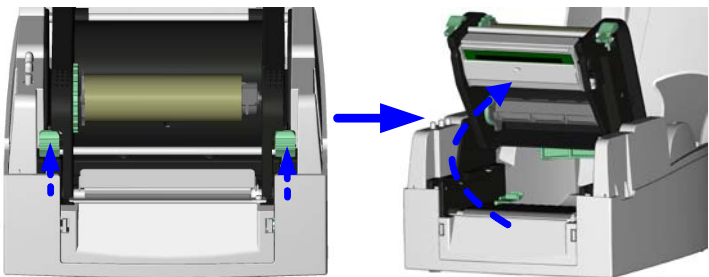
Please check the specific print mode, and then go into the Setting Mode after power on the printer °

### 2-1. Ribbon Installation

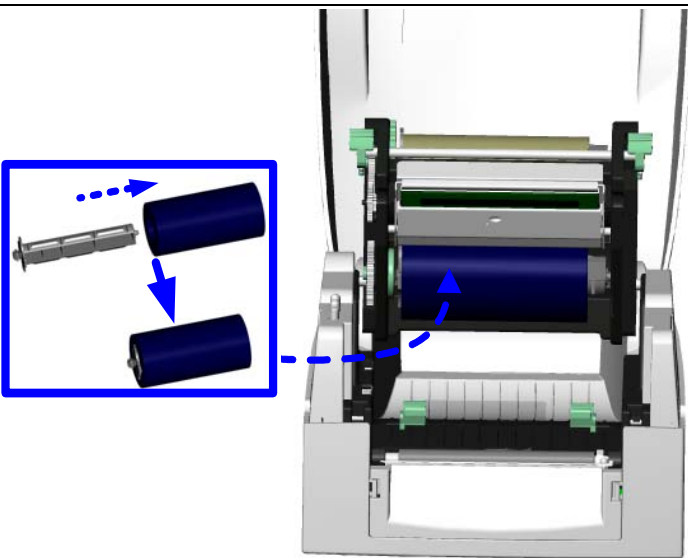
1. Place the printer on a horizontal surface, and open the top cover by pressing the Cover Open Buttons on both sides.

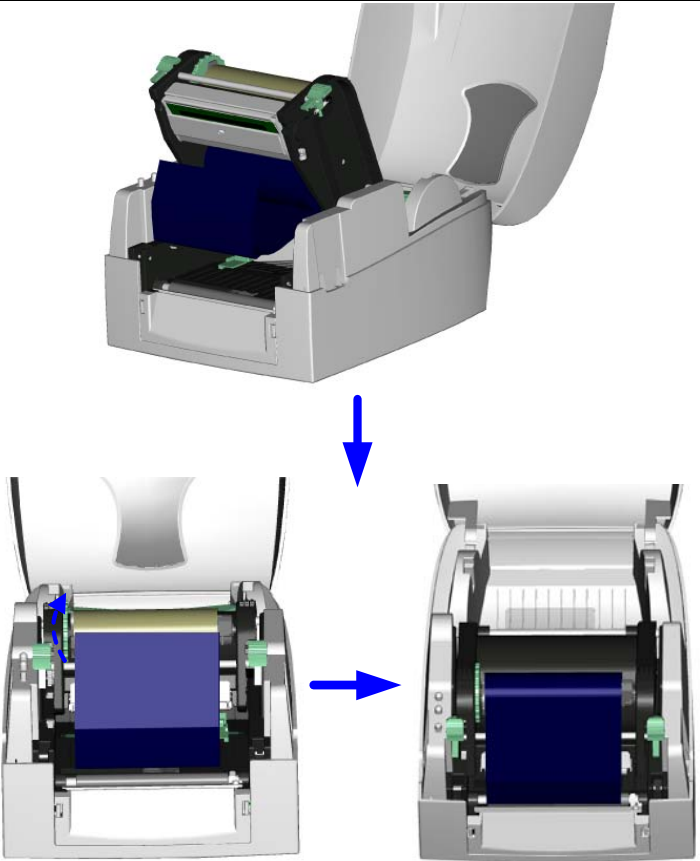



2. Loosen and then lift the upper print mechanism by pressing the locking tenons.


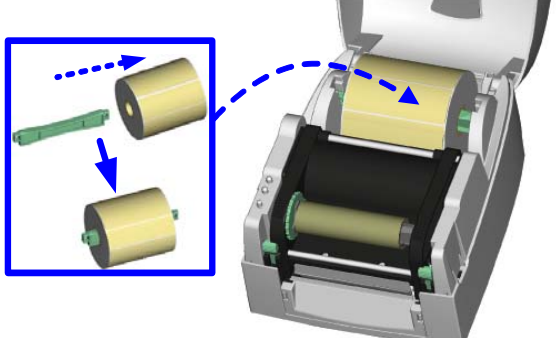
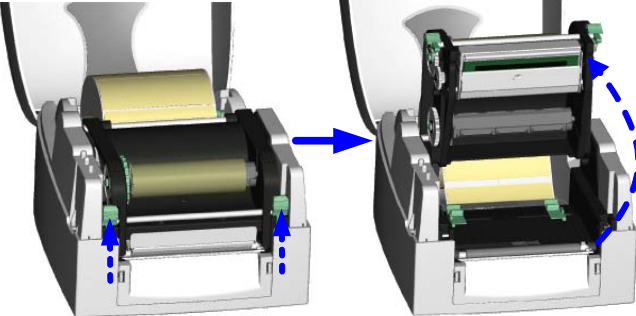
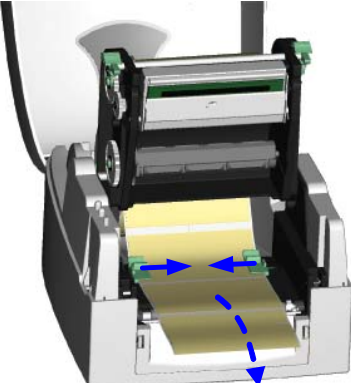



3. Place a new ribbon roll onto the ribbon supply shaft.



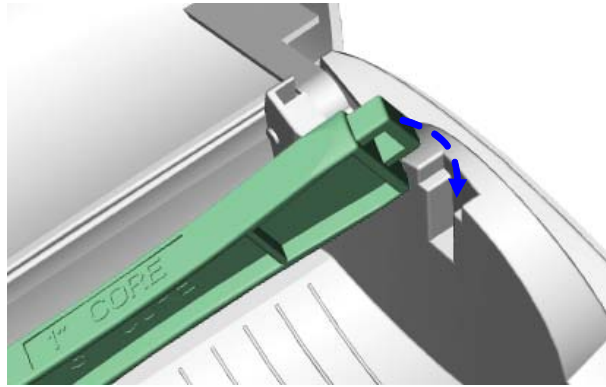
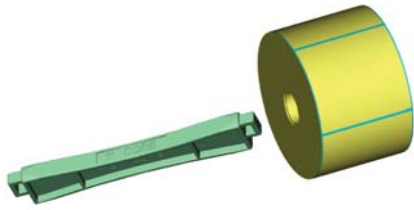
<p>4. Feed the ribbon from the Ribbon Supply Shaft under the Print Head.</p> <p>5. Wrap the ribbon around the Ribbon Shaft and stick the ribbon onto the Empty Ribbon Roll Core.</p>	
<p>6. Firmly close the upper print mechanism.</p>	

## 2-2. Label Installation

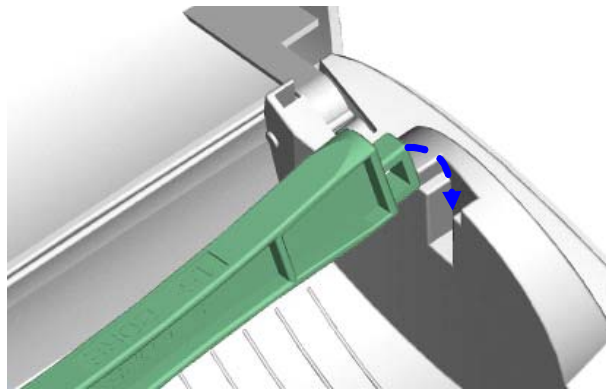
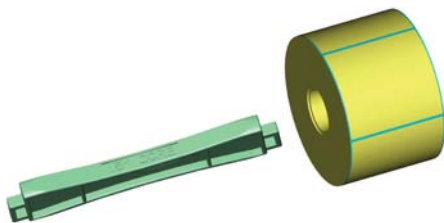
<p>1. Open the top cover by pressing the Cover Open Buttons on both sides.</p>	
<p>2. Place the label roll onto the Label Roll Core.</p>	
<p>3. Loosen and lift the upper print mechanism by pressing the locking tenons.</p>	
<p>4. Feed the label through the two Label Guides to the Tear-off Bar.</p> <p>5. Align the label guides to the label edge.</p>	
<p>6. Close the upper print mechanism from the top to finish label installation.</p>	

## 2-3. Label Roll Core Installation Instruction

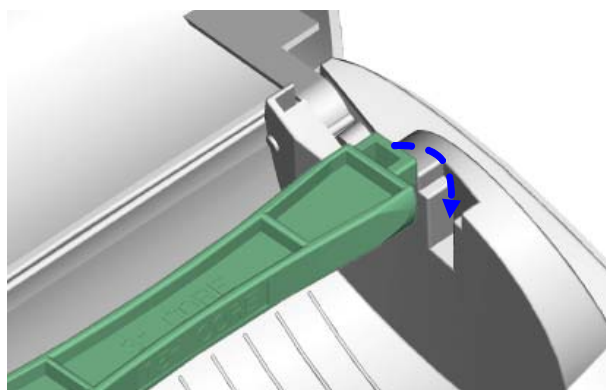
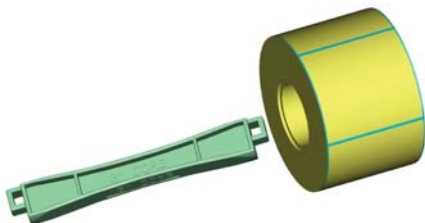
(A) 1" roll core installation



(B) 1.5" roll core installation

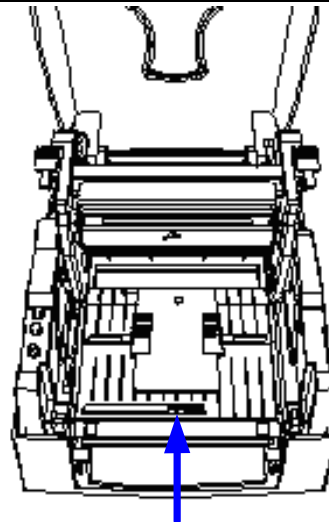
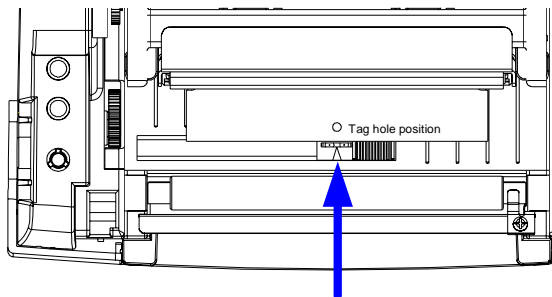


(C) 3" roll core installation



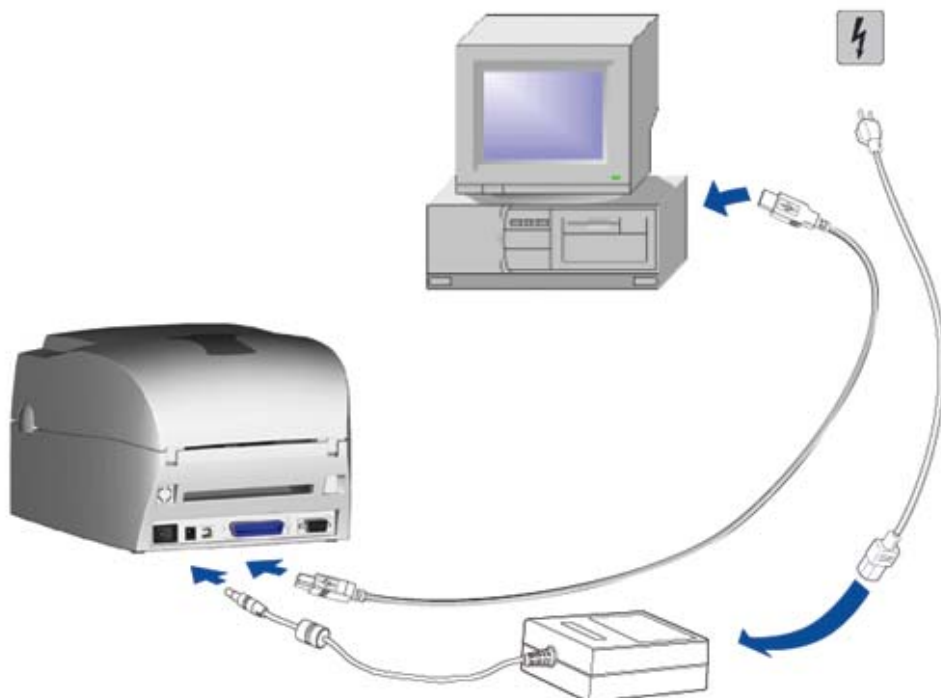
## 2-4. Card / Hang tags Installation

When installing cord tags, the tag hole must align with the sensor arrow (as indicated in figure), then use the Label Guide to secure the tags.



## 2-5. PC Connection

1. Please make sure the printer is powered off.
2. Take the power cable, plug the cable switch to the power socket, and then connect the other end of the cable to the printer power socket.
3. Connect the cable to the USB/parallel port on the printer and on the PC.
4. Power on the PC and the printer and the printer's LED light will shine.



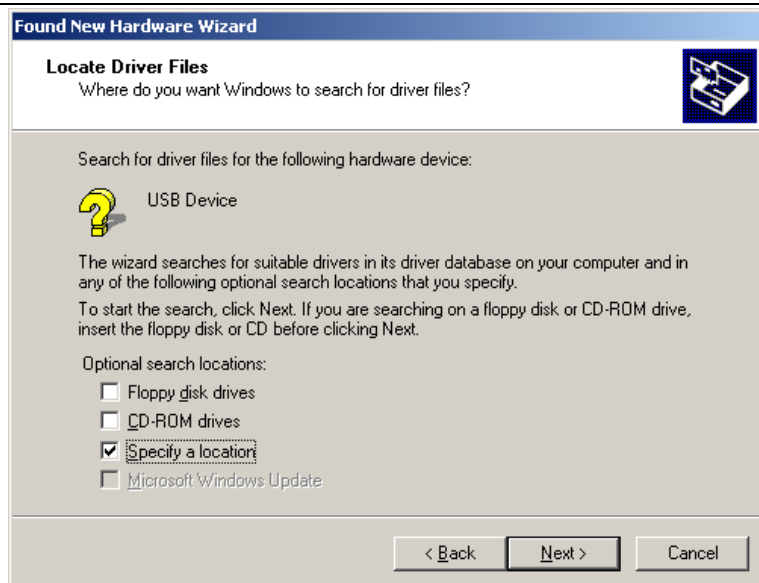


## 2-6. Driver Installation

1. Once the USB cable is connected from PC to the printer, PC will automatically detect the new device and begin the installation process.

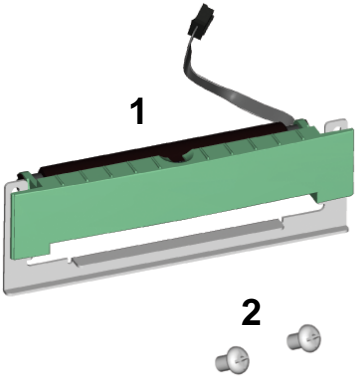
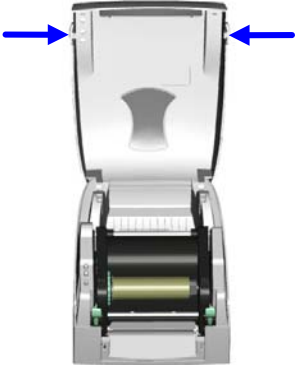
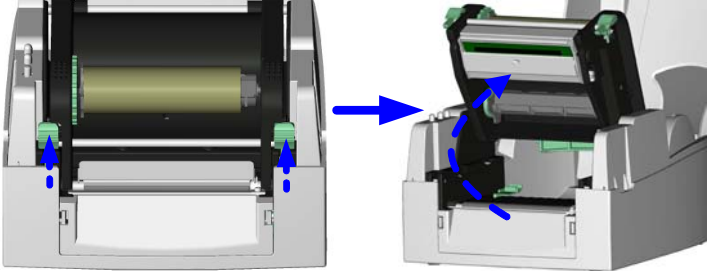
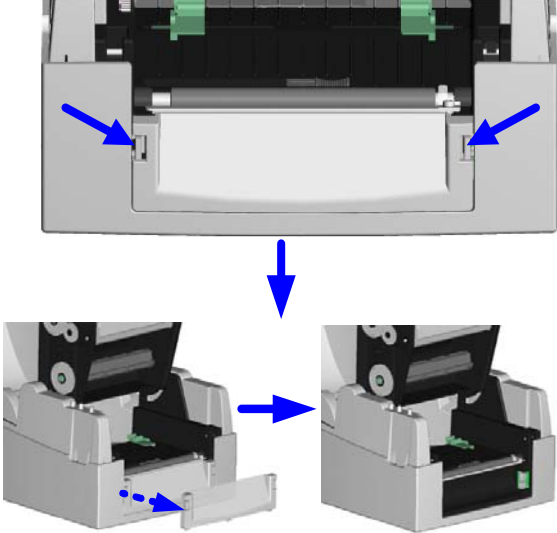


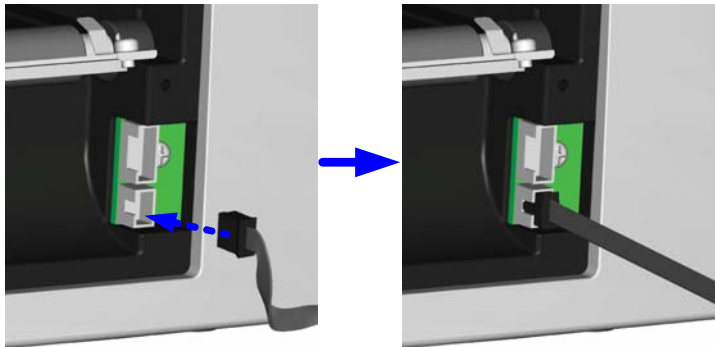
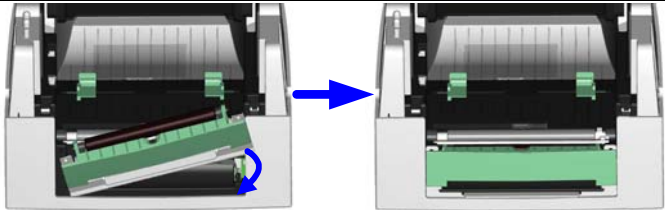
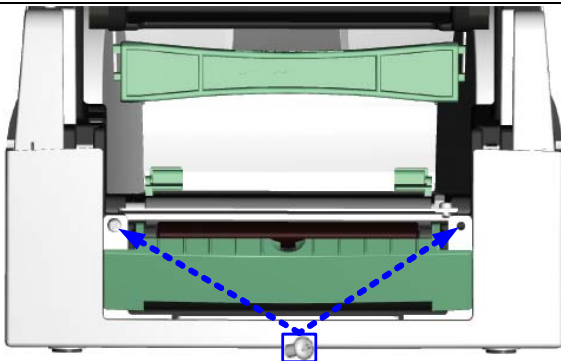
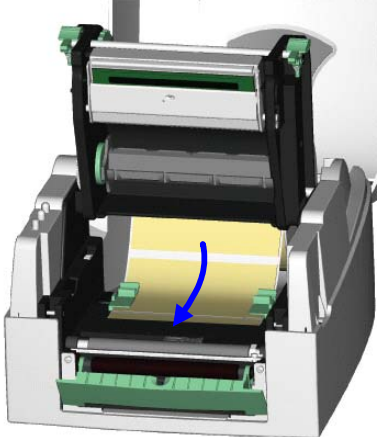
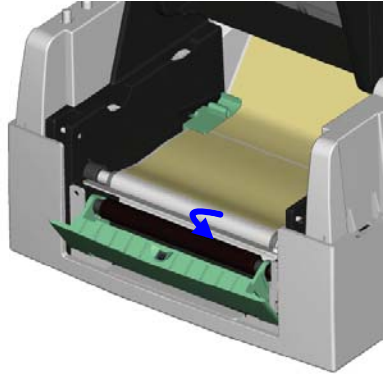
2. Insert the product CD, select 'Specify a location' and describe the path of the printer driver.
3. Follow the instruction on the Window and complete the driver installation.



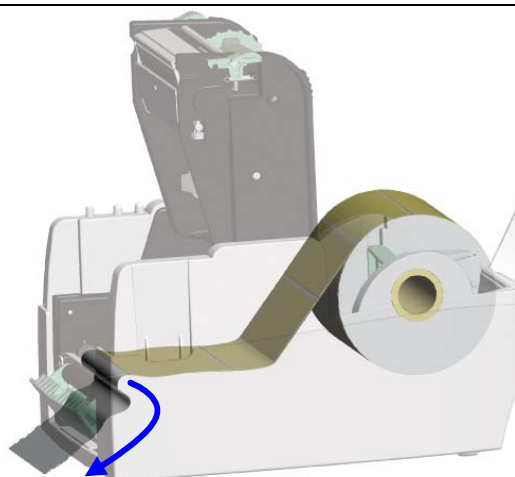
## 3. Accessory

### 3-1. Stripper Installation

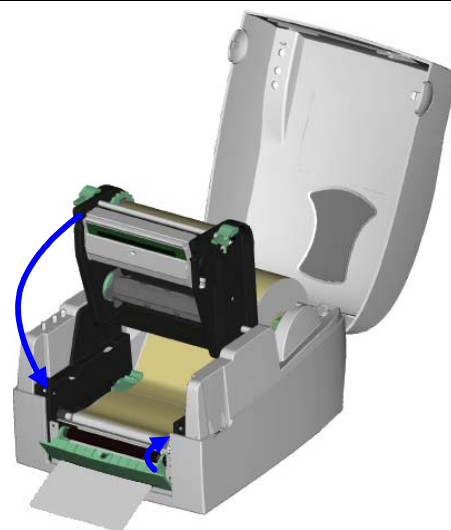
1 2	Stripper Module Screw (TAP 3*8) x 2pcs	
<p>【Note1】 Please power off the printer before installing the stripper module.</p> <p>【Note2】 Label liner thickness is recommended to be 0.06mm ± 10% with basic weight 65g/m<sup>2</sup> ± 6%.</p> <p>【Note3】 The max width for stripper is 110mm</p> <p>【Suggestion】 When using the stripper module, set the stop position to 9 in CLabel and the E value is 9.</p>		
2.	Loosen and then lift the upper print mechanism by pressing the locking tenons.	
3.  4.	Unlock the front cover piece by pushing locks inward.  Lift/take off the front cover piece according to the direction shown in the figure.	

<p>5. Plug in the stripper connector onto the switchboard socket. (refer to the right figure)</p> <p><b>【Note】</b> There are 2 sockets on the converting boards (one is for stripper installation, and another one is for cutter), before plug the connector into socket, please check the pin first.</p>	
<p>6. Place the left side of the stripper first, and then fit the right side.</p>	
<p>7. Hold the stripper module and tighten the screws.</p>	
<p>8. Feed the label through the Label Guides.</p> <p><b>【Note】</b> The label / paper used for rewinding purpose is suggested to be at least 30mm in height.</p>	
<p>9. Peel off the first label, and feed the liner through the roller and the Tear-off Bar.</p>	

10. Follow the direction as shown in figure to feed the liner across the stripper.



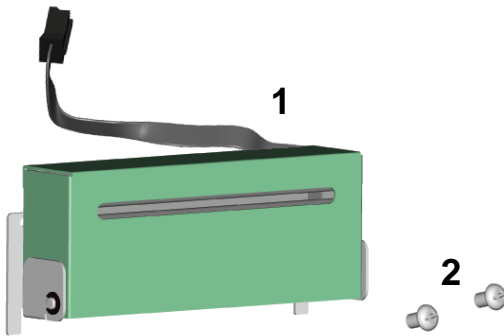

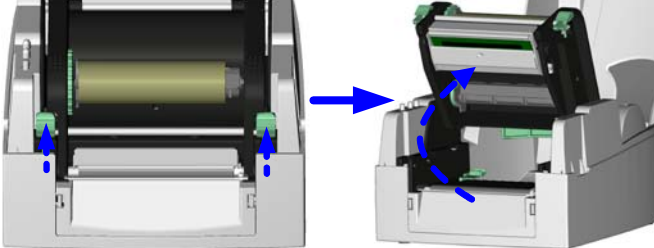
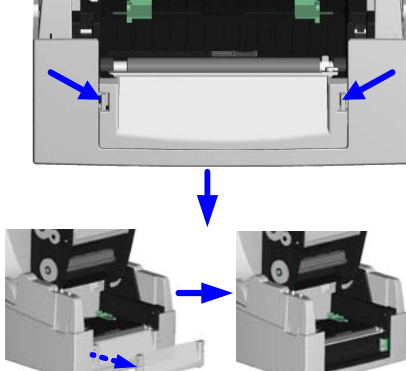
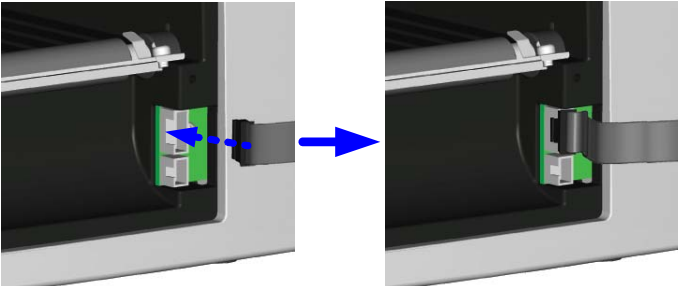
11. Close the upper print mechanism and the stripper.

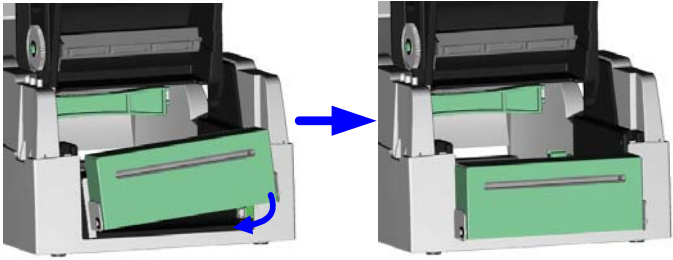
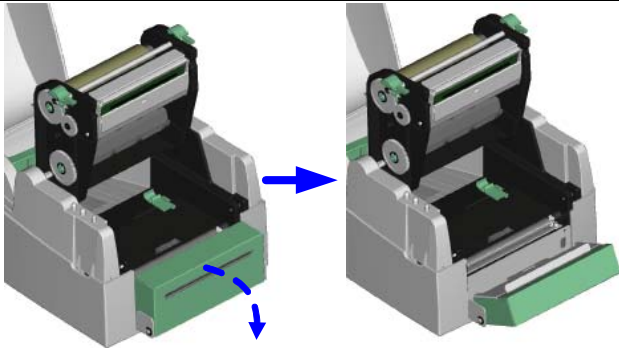
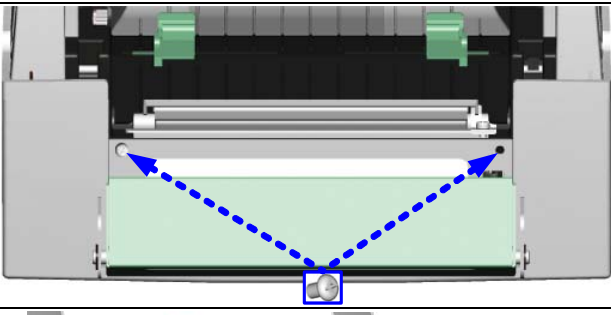
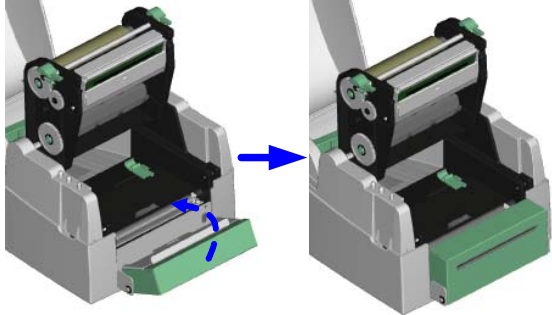
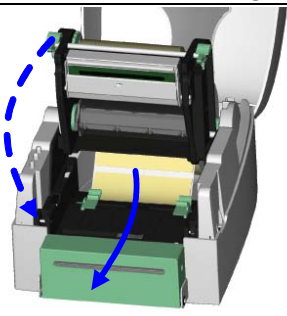
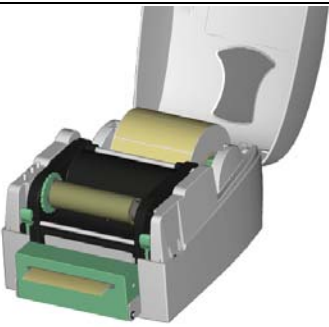


12. Press the FEED key to adjust the position of label and complete the installation.



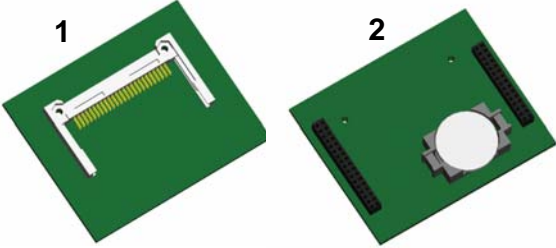

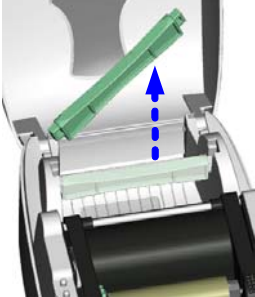
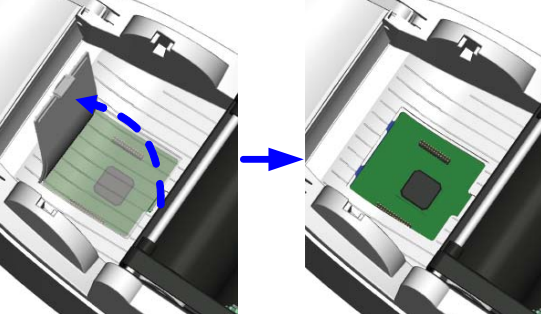
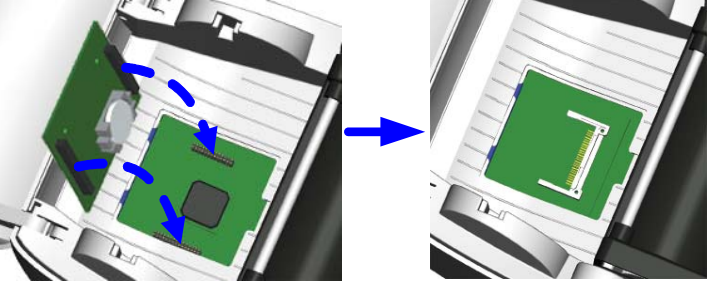

### 3-2. Cutter Installation

1	Cutter Module	
2	Screw (TAP 3*8) x 2pcs	
<p><b>【Note1】</b> Please power off the printer before installing the cutter module.</p> <p><b>【Note2】</b> Do not cut self-adhesive labels! The traces of adhesive will pollute the rotary knife and impair safe operation! The service life of the cutter is 500,000 cuts with 160g/m<sup>2</sup> paper weight and 250,000 cuts with 200g/m<sup>2</sup> paper weight.</p>		<p><b>【Note3】</b> The max paper cutting width is 116mm</p> <p><b>【Suggestion】</b> When installing the cutter module, set the stop position to 30 in CLabel and the E value is 30.</p>
1.	Open the top cover by pressing the Cover Open Buttons on both sides.	
2.	Loosen and then lift the upper print mechanism by pressing the locking tenons.	
3.	Unlock the front cover piece by pushing locks inward.	
4.	Lift/take off the front cover piece according to the direction shown in the figure.	
5.	Plug in the cable connector of the cutter module onto the switchboard socket.	
<p><b>【Note】</b> Before plug the connector into socket, please check the pin first.</p>		

<p>6. Place the left side of the stripper first, and then fit the right side.</p>	
<p>7. Flip the cutter module downward to open the cutter.</p>	
<p>8. Hold the cutter module and lock it with screws</p>	
<p>9. After the screws are locked, flip close the cutter module.</p>	
<p>10. Feed the label through the Label Guides.</p> <p>11. Close the mechanism to complete the cutter module installation.</p>	
<p>12. Press the FEED key to adjust the position of label and complete the installation.</p>	



### 3-3. CF Card Adapter Installation

1	CF Card Adapter (Front)	
2	CF Card Adapter (Back)	
<p><b>【Note】</b> Please power off the printer before installing the CF Card Adapter.</p>		
1.	Open the top cover by pressing the Cover Open Buttons on both sides.	
2.	Take off the label roll core.	
3.	Open and remove the plastic cover from the inner base.	
4.	<p>Check the correspondent pins and sockets to plug the adapter card onto the main board.</p> <p><b>【Note】</b> Please make sure the sockets and the pins are match, otherwise the pins may get damaged.</p>	
5.	Close the plastic cover.	

### 3-4. CF Card Instruction

Falcon 4D Plus series printers can read the CF Card after installed the CF Card Adapter. If the built-in memory is insufficient for storing label formats, graphics or fonts, users can use CF Card as external memory to provide more memory space.

When using the CF card, please follow the instruction as below:

1. Please power off the printer before installing or removing CF Card from the card slot.
2. The CF Card cannot be used for printer's external memory until it is formatted in FAT16. When the printer has detected that the CF card is not formatted in FAT16, it will beep 3 times and the Status led light will flash orange.
3. If user wants to format the CF Card, just press the "FEED" key, and then the printer will start to format the CF Card in FAT16. When the format is complete, the LED light will turn to green.
4. If choose not to format the CF Card, just open the Top Cover of printer and wait for the turn-on procedure complete.
5. After the format is complete, a file folder named "CF" would be created automatically. This folder is for storing all the data from the printer, please don't do any change on it.
6. The specification of CF Card that is supported by the printer is as follow:
  - Compact Flash Type I
  - Compact Flash (CF) v1.4 specification
  - Capacity: 128MB ~ 1GB
  - File system: FAT16



## 4. Control Panel

### 4-1. LED Status

Press and hold the FEED key then power on the printer, the printer will beep 3 times and enter into Self-Test status. If keep holding the FEED key, the status will change in sequence to Auto Sensing Mode, Dump Mode, Direct Thermal Mode, Thermal Transfer Mode, See-through Sensor on/off, and then return to Self-Test again. These different statuses can change the setting of printer, they are described as follows:

READY

STATUS

FEED

FEED	LED Light	Beep	Status	Description
READY	Green	1	Normal status	Normal status
STATUS				
Press and hold the FEED Key then power on the printer.				
READY	Red (Flash)	3	Self-Test	Printing Self-Test page, for operation instructions please refer to page 25.
STATUS	Orange			
READY	Orange (Flash)	1	Auto Sensing Mode	Printers currently in Auto Sensing Mode, for operation instructions please refer to page 26.
STATUS	Orange			
READY	Green (Flash)	1	Dump Mode	Printers currently in Dump Mode, for operation instructions please refer to page 26 .
STATUS	Orange			
READY	Red (Flash)	1	Direct Thermal (DT) Mode	Set the printer to Direct Thermal (DT) Mode, for operation instructions please refer to page 26.
STATUS	Red			
READY	Orange (Flash)	1	Thermal Transfer (TT) Mode	Set the printer to Thermal Transfer (TT) Mode, for operation instructions please refer to page 26.
STATUS	Red			
READY	Green (Flash)	1	See-through Sensor on/off	Set the See-through Sensor on or off, for operation instructions please refer to page 27.
STATUS	Red			
Return to Self Test				
READY				Printer is currently downloading F/W
STATUS	Red (Flash)			

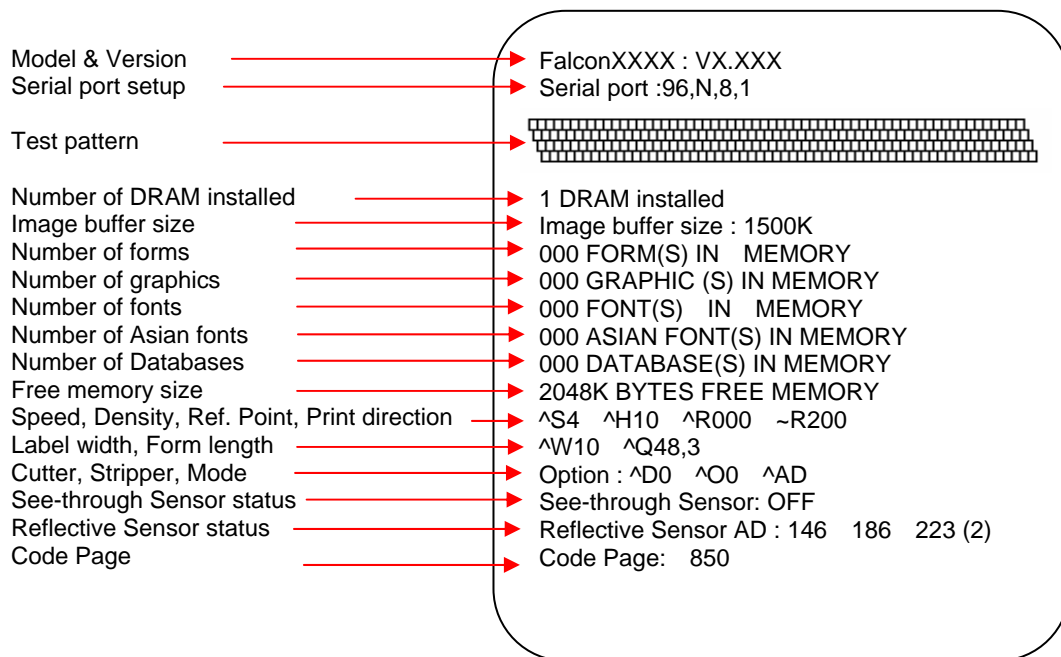
## 4-2. FEED Key

After pressing the FEED key, printer will send the media (according to media type) to the specified stop position. When printing with continuous media, pressing the FEED key will feed media out to a certain length. When printing labels, pressing the FEED key will feed one label at a time; if the label is not sent out in a correct position, please proceed with the Auto Sensing (see page 26).

## 4-3. Self-Test

The Self-Test function in a printer will help user to figure out whether the printer is operating normally. In the Self-Test Mode, the printer will print out a test sample as below figure. The printer will back to standby mode after printing out the test sample. Below are the Self-Test procedures:

1. Power off the printer, press and hold the FEED key.
2. Power on the printer (while still holding the FEED key); release the FEED key after printer beeping 3 times.
3. After about 1 second, printer would automatically print out the following. This indicates the printer is operating normally.



Self-Test includes the internal printer data setting.

## 4-4. Auto Sensing

Printer can automatically detect label (black mark paper) length and record it. By doing this, the printer can accurately detect the label (black mark) positions without setting the print length.

1. Check if the Label Sensor is located at the right sensing position.
2. Power off the printer, press and hold the FEED key.
3. Power on the printer (while still holding the FEED key) and the printer will beep 3 times. Keep holding the FEED key, wait for the STATUS light turn orange and READY light flash orange, then release the FEED key. Printer will automatically detect the label size/length and record it.

Printer goes back to standby mode after performing the measurement.

## 4-5. Dump Mode

When label setting and the print result don't match for each other, it is recommended to go into the Dump Mode to check whether there's any mistake in data transmission between the printer and the PC. For example, when printer receives 8 commands, yet without processing these commands, only printing out the contents of commands, this will confirm whether the commands were received correctly. Test procedures to enter the Dump Mode are as follows:

1. Power off the printer, press and hold the FEED key.
2. Power on the printer (while still holding the FEED key).
3. Keep holding the FEED key, wait for the STATUS light turn orange and READY light flash green, then release the FEED key. Printer will automatically print "DUMP MODE BEGIN." This indicates the printer is already in Dump Mode.
4. Send commands to the printer, and check if the printout matches the sent commands.

To cancel (get out of the Dump Mode), press the FEED key, the printer will automatically print out "OUT OF DUMP MODE". This indicates that printer is back in the standby mode. Powering off the printer is another way to exit the Dump Mode.

## 4-6. Direct Thermal / Thermal Transfer Mode Switch

1. Power off the printer, press and hold the FEED key.
2. Power on the printer (while still holding the FEED key) and the printer will beep 3 times. Keep holding the FEED key, wait for the STATUS light turn red and READY light flash red, then release the FEED key. The printer will go into Direct Thermal (DT) Mode and automatically print "NOW IS DIRECT THERMAL (DT MODE)". This indicates that printer is currently in DT Mode.
3. Power on the printer (while still holding the FEED key) and the printer will beep 3 times. Keep holding the FEED key, wait for the STATUS light turn red and READY light flash orange, then release the FEED key. The printer will go into the Thermal Transfer (TT) Mode and automatically print "NOW IS THERMAL TRANSFER (TT MODE)". This indicates that printer is currently in TT Mode.

NOW IS THERMAL TRANSFER ( TT MODE)

NOW IS DIRECT THERMAL (DT MODE)

## 4-7. See-through Sensor on/off

There are two types of sensor in Falcon 4D Plus printer - Reflective Sensor and See-through Sensor. Users can set one of them as active sensor. By default, the Reflective Sensor is turned on and the See-through Sensor is turned off. However, the reflective sensor may not be able to detect the label gap on special label materials. For example, when printing on labels with thick liner, colored liner, or back graphics, then the see-through sensor would need to be enabled since the reflective sensor may not work correctly.

To turn the See-through Sensor on, please do as follows:

1. Power off the printer, press and hold the FEED key.
2. Power on the printer (while still holding the FEED key) and the printer will beep 3 times. Keep holding the FEED key, wait for the STATUS light turn red and READY light flash green, then release the FEED key. The printers will automatically print "SEE-THROUGH SENSOR IS ON". This indicates that the See-Through Sensor is turned on (and the Reflective Sensor is turned off).
3. To turn off the See-Through Sensor, please repeat above-mentioned procedures. Then the printer will print "SEE-THROUGH SENSOR IS OFF" to indicate that the See-Through Sensor is turned off.

SEE-THROUGH SENSOR IS ON

or

SEE-THROUGH SENSOR IS OFF

For checking the status of See-through Sensor (on or off), please perform Auto Sensing once. If both of READY and STATUS lights are green when doing Auto Sensing, then the See-through Sensor is on. If both of READY and STATUS lights are orange, then the See-through Sensor is off.

### **【Note】**

*When the See-through Sensor is enabled, the Label Sensor must be placed in the center of the printer.*

## 4-8. Error Messages

LED Light		Beep	Description	Solution
Ready	Status			
	Red	4 beeps twice	Print head is not firmly closed.	Re-open the print head and make sure it closes tightly.
Red (Flash)	Red (Flash)	None	The temperature of print head is too high.	Wait for the print head temperature drops to the normal temperature range, printer will go back to the standby mode and the LED light will stop flashing.
	Red	3 beeps twice	Ribbon is not installed, and printer shows error message.	Make sure the printer is in the Direct Thermal mode.
			Ribbon is used up or ribbon supply shaft is not moving.	Replace with new ribbon roll.
	Red	2 beeps twice	Unable to detect paper.	Make sure the movable sensor mark is at the correct position, if the sensor is still unable to detect paper, and then go through Auto Sensing again.
			Paper used up.	Replace with new label roll.
	Red	2 beeps twice	Abnormal paper feed.	Possible causes: card tags or paper fall into the gap behind the platen roller, can't find label gap/black mark, black mark paper out. Please adjust it according to actual usage.
	Red	2 beeps twice	Memory is full; printer will print out "Memory full."	Delete unnecessary data in the memory.
	Red	2 beeps twice	Can't find the file; printer will print out "Filename can not be found."	Use "~X4" command to print out all the files, and then check whether the file exist and the file name is correct.
	Red	2 beeps twice	File name is repeated; printer will print out "Filename is repeated."	Change the file name and download again.

## 5. Maintenance and Adjustment

### 5-1. Thermal Print Head Cleaning

Unclear printouts may be caused by dusty print head, ribbon stain or label liner glue. Therefore when printing, it's necessary to keep the top cover closed. Also, check and prevent paper/label from being stained or dusty to ensure print quality and to prolong the print head life. Print head cleaning instructions are as follows:

1. Power-off the printer.
2. Open the top cover.
3. Take out the ribbon.
4. Open the print head by pressing the locking tenons.
5. If on the print head (see blue arrow) there's label pieces or other stain, please use a soft cloth with industrial use alcohol to wipe away the stain.

**【Note1】**

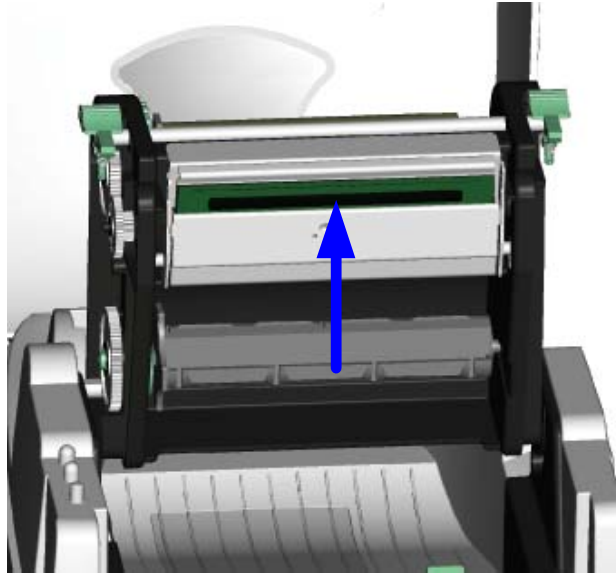
*Weekly cleaning on the print head is recommended.*

**【Note2】**

*When cleaning the print head with soft cloth, make sure there is no any metal or hard particles attached on it.*

**【Note3】**

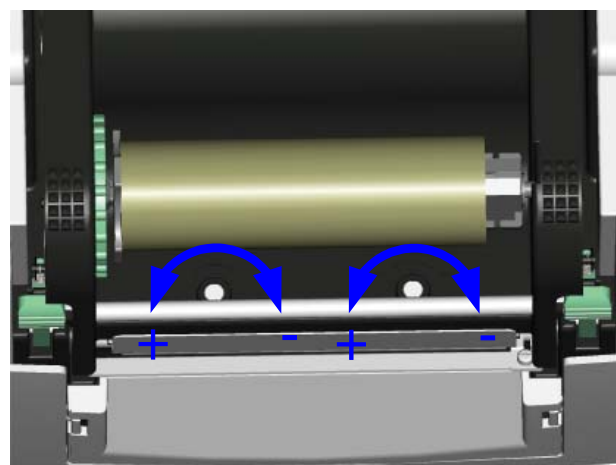
*You can also clean the print head with the cleaning card that comes with the printer.*



### 5-2. Thermal Print Head Balance Adjustment

When printing with different label materials or using different ribbon types, unbalanced print quality may occur due to the media material differences, thus it's necessary to adjust the Thermal Print Head pressure.

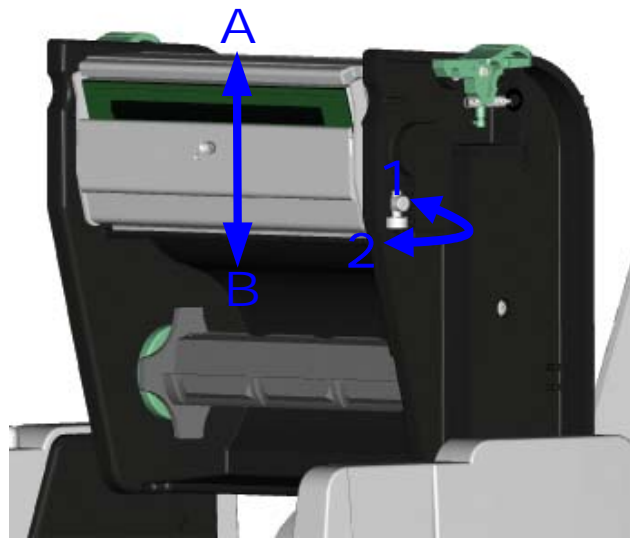
1. Open the top cover.
2. Take out the ribbon.
3. Turning the print head adjustment screws slightly by screwdriver to increase or decrease print head pressure.



### 5-3. Print Line Adjustment

To get better printing balance and quality, use print head adjusting gear to adjust the contacting surface between print head and label.

1. When turning print head adjusting gear counter-clockwise (as arrow 1 shows), print head would move in the direction where arrow A shows.
2. When turning print head adjusting gear clockwise (as arrow 2 shows), print head would move in the direction where arrow B shows.

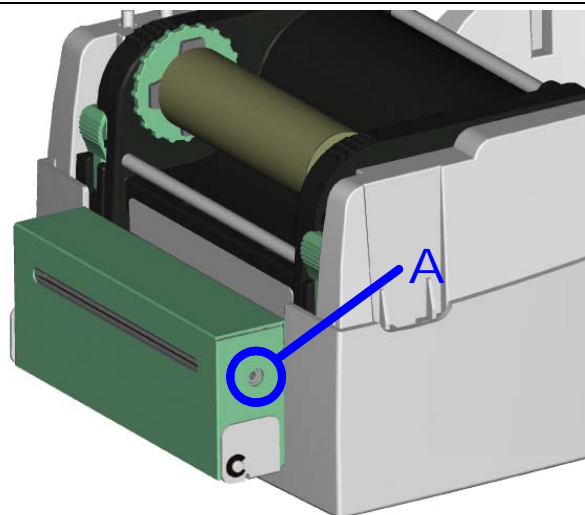


### 5-4. Adjust the cutter

1. A cutter-adjusting hole is present on the side of cutter (where A is pointing to).
2. The cutter will not work properly if there is a paper jam. Turn the power off and use a #M3 hexagon wrench inserted into hole "A", and then turn it counter-clockwise.
3. Power on the printer after clearing the paper jam, the cutter will reset automatically.

**【Note】**

*The label / paper used for cutting is suggested to be at least 30mm in height.*



## 5-5. Troubleshooting

Problem	Recommended Solution
Power on the printer, but the LED does not light up	<ul style="list-style-type: none"> <li>◆ Check the power connector</li> </ul>
LED light turns red (power/status) after printing stops	<ul style="list-style-type: none"> <li>◆ Check for software setting or program command errors</li> <li>◆ Replace with suitable label or ribbon</li> <li>◆ Check if label or ribbon is all out</li> <li>◆ Check if label is jammed/tangled up</li> <li>◆ Check if mechanism is not closed (Thermal Print Head not positioned correctly)</li> <li>◆ Check if sensor is blocked by paper/label</li> <li>◆ Check for abnormal cutter function or of no actions (if cutter is installed)</li> </ul>
Printing started, but nothing was printed on the label	<ul style="list-style-type: none"> <li>◆ Check if label is placed upside down or if label is not suitable for the application</li> <li>◆ Select the correct printer driver</li> <li>◆ Select the correct label and print type</li> </ul>
When printing, label is jammed/tangled up	<ul style="list-style-type: none"> <li>◆ Clean the label jam, and if label is stuck on Thermal Print Head, please remove it by using soft cloth with alcohol.</li> </ul>
When printing, only part of the contents were printed	<ul style="list-style-type: none"> <li>◆ Check if label or ribbon is stuck on the Thermal Print Head</li> <li>◆ Check if application software has errors</li> <li>◆ Check if start position setting has errors</li> <li>◆ Check if ribbon has wrinkles</li> <li>◆ Check if ribbon supply shaft is creating friction with the platen roller. If the platen roller needs to be replaced, please contact your reseller for more information</li> <li>◆ Check if power supply is correct</li> </ul>
When printing, part of the label wasn't printed completely	<ul style="list-style-type: none"> <li>◆ Check if Thermal Print Head is stained or dusted</li> <li>◆ Use internal command "~T" to check Thermal Print Head can print completely</li> <li>◆ Check the media quality</li> </ul>
Printout not in desired position	<ul style="list-style-type: none"> <li>◆ Check if sensor is covered by paper or dust</li> <li>◆ Check if liner is suitable for use, please contact reseller for more information</li> <li>◆ Check if label roll edge is aligned with Label Width Guide</li> </ul>
When printing, page skipping occurs	<ul style="list-style-type: none"> <li>◆ Check if error occurs on label height setting</li> <li>◆ Check if sensor is covered by dust</li> </ul>
Unclear printout	<ul style="list-style-type: none"> <li>◆ Check print darkness setting</li> <li>◆ Check if Thermal Print Head is covered with glue or stain</li> </ul>
When using cutter, label wasn't cut straight	<ul style="list-style-type: none"> <li>◆ Check if label is set up straight</li> </ul>
When using cutter, label wasn't cut successfully	<ul style="list-style-type: none"> <li>◆ Check whether label thickness exceeds 0.2mm</li> </ul>
When using cutter, label couldn't feed or abnormal cutting occurs	<ul style="list-style-type: none"> <li>◆ Check if cutter is installed properly</li> <li>◆ Check if Paper Feed Rods are sticky</li> </ul>
When using stripper, abnormal function occurs	<ul style="list-style-type: none"> <li>◆ Check if stripper sensor is covered with dust</li> <li>◆ Check if label is installed properly</li> </ul>

### **【Note】**

*Your dealer is knowledgeable about Falcon printers, printing software, and your unique system. Please contact your local dealer for further technical support.*